

## CLAIMS:

1. A cast-cutter for use in removing a cast from a patient, the cast-cutter comprising:

a body;

5 cutting means supported by the body and adapted for cutting a portion of material from the cast by a shearing action; and

10 a protection member supported by the body and adapted to be positioned between the cutting means and the patient, to protect the skin of the patient.

2. A cast-cutter as claimed in claim 1, wherein the cutting means is adapted for removing a strip of material from the cast.

15 3. A cast-cutter as claimed in claim 1 or 2, wherein the protection member is supported by the body via a connecting member which is coupled at one end to the body and at another end to the protection member.

20 4. A cast-cutter as claimed in claim 3, wherein the connecting member is adjustable in order to vary the distance between the body and the protection member.

25 5. A cast-cutter as claimed in any preceding claim, wherein the protection member is releasably coupled to the body.

30 6. A cast-cutter as claimed in any preceding claim, wherein the protection member comprises a contact surface for contacting the skin of a patient when the cast-cutter is in use.

7. A cast-cutter as claimed in claim 6, wherein said contact surface is smooth in order to reduce the friction between the contact surface and the skin of a patient.

5 8. A cast-cutter as claimed in claim 6 or 7, wherein the contact surface has a substantially planar surface.

9. A cast-cutter as claimed in claim 6 or 7, wherein the contact surface has a curved surface.

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10. A cast-cutter as claimed in any preceding claim, wherein the protection member comprises tapered edges in order to be smoothly guided under a cast.

15 11. A cast-cutter as claimed in any preceding claim, wherein a leading edge of the protecting member is tapered on at least one side.

20 12. A cast-cutter as claimed in any preceding claim, wherein a leading edge of the protecting member is tapered on both sides to form a wedge profile.

25 13. A cast-cutter as claimed in any preceding claims, wherein the cutting means is adapted to cut material by a shearing action by the interaction of first and second portions, each portion comprising at least one cutting edge which in use cooperate to produce a shearing strain in a material positioned therebetween.

30 14. A cast-cutter as claimed in claim 13, wherein the first and second portions of the cutting means each include a single cutting edge.

15. A cast-cutter as claimed in any preceding claim,  
wherein the cutting means comprises a first portion  
defining an aperture having a cutting edge, and a second  
portion having a cutting edge and adapted to be received  
5 within said aperture.

16. A cast-cutter as claimed in claim 15, wherein the  
first portion defines two apertures each having a cutting  
edge, and the second portion defines two elements each  
10 having a respective cutting edge and adapted to be  
received with a respective aperture of the first portion.

17. A cast-cutter as claimed in claim 16, wherein the  
apertures are elongated slots and are aligned parallel to  
15 each other.

18. A cast-cutter as claimed in any one of claim 13  
to 17, wherein the first portion of the cutting means is  
be stationary, and the second portion is moveable.  
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19. A cast-cutter as claimed in any one of claims 13 to  
18, wherein the first portion is located on the  
protection member.

20. A cast-cutter as claimed in any one of claims 13 to  
18, wherein the first portion is mounted separately from  
the protecting member.  
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21. A cast-cutter as claimed in any one of claims 13 to  
20, wherein the second portion is mounted on the body and  
is reciprocally moveable along a linear path relative to  
the first portion.  
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22. A cast-cutter as claimed in any one of claims 13 to 20, wherein the second portion is pivotally mounted relative to the first portion and is moved towards the first portion along an arcuate path.

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23. A cast-cutter as claimed in any one of claims 13 to 20, wherein the second portion is rotatably mounted relative to the first portion.

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24. A cast-cutter as claimed in any one of claims 13 to 23, wherein the respective cutting edges of the first and second portions are provided as inserts which are secured to the first and second portions respectively.

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25. A cast-cutter as claimed in claim 24, wherein the inserts are releasably secured to the respective first and second portions.

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26. A cast-cutter as claimed in any preceding claim, wherein the cutting means are adapted to shear discrete fragments of material from a cast.

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27. A cast-cutter as claimed in claim 26, wherein discrete fragments of material removed from a cast are passed through the second portion of the cutting means and subsequently ejected at a location removed from the point of cutting.

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28. A cast-cutter as claimed in claim 26, wherein discrete fragments of material removed from a cast are ejected from below the cutting means.

29. A cast-cutter as claimed in claim 26, wherein discrete fragments of material removed from a cast are ejected from the rear of the cutting means.

5 30. A cast-cutter as claimed in any one of claims 1 to 25, wherein the cutting means are adapted to shear a continuous strip of material from a cast.

10 31. A cast-cutter as claimed in any one of claims 13 to 30, wherein a leading edge of the second portion of the cutting means is chamfered.

15 32. A cast-cutter as claimed in any one of claims 13 to 30, wherein the first portion defines an aperture which is chamfered at one side.

20 33. A cast-cutter as claimed in any preceding claim, wherein the cutting means is adapted to remove both discrete fragments and continuous strips of material from a cast.

25 34. A cast-cutter as claimed in any one of claims 13 to 33, wherein the cutting means is adapted to remove continuous strips of material from a cast and the first portion of the cutting means comprises a strip exit to allow a strip of the cast which is being removed to pass therethrough.

30 35. A cast-cutter as claimed in claim 35, wherein the strip exit comprises tapered sides, which sides taper outwards, away from the aperture of the first portion.

36. A cast-cutter as claimed in any preceding claim, wherein the cutting means is operated by electric drive means.

5 37. A cast-cutter as claimed in any one of claims 1 to 35, wherein the cutting means is operated by hydraulic drive means.

10 38. A cast-cutter as claimed in any one of claims 1 to 35, wherein the cutting means is operated by pneumatic drive means.

15 39. A cast-cutter as claimed in any preceding claim, wherein the cast-cutter further comprises a normally open activation switch.

20 40. A cast-cutter as claimed in any preceding claim, wherein the cast-cutter comprises a safety switch which has to be activated before the cast-cutter can be operated.

25 41. A cast-cutter as claimed in any preceding claim, wherein the cast-cutter further comprises a safety guard disposed around the cutting means.

42. A cast-cutter as claimed in claim 41, wherein the guard is permanently fixed in place.

30 43. A cast-cutter as claimed in claim 41, wherein the guard is retractable.

44. A cast-cutter as claimed in claim 43, wherein the guard includes a safety switch such that the cast-cutter

may only be operated when the safety guard is positioned correctly in place.

5 45. A cast-cutter as claimed in any one of claims 41 to 44, wherein the safety guard is substantially transparent.

10 46. A cast-cutter as claimed in any preceding claim, wherein the cast-cutter further comprises means for collecting the sections of a cast which have been removed.

15 47. A cast-cutter as claimed in claim 46, wherein the collecting means comprises a container releasably attached to the body portion of the device.

20 48. A cast-cutter as claimed in claim 46, wherein the collecting means is a separate receptacle located remote from the cast-cutter and connected thereto by a conduit.

25 49. A cast-cutter as claimed in any preceding claim, wherein cast-cutter comprises extraction means to assist in drawing fragments or strips of cast material away from the cutting means.

50. A method of removing a cast from a patient, said method comprising the steps of:

providing a cast cutter having shearing cutting means and a protecting member;

30 placing the protecting member adjacent to the skin of the patient such that the protecting member is located between the skin of the patient and the cutting means;

aligning the cutting means with and end of the cast;  
and

activating and moving said cast-cutter along the  
length of the cast to remove a strip of material  
5 therefrom, allowing the cast to be removed from the  
patient.

51. A method of removing a cast from a patient as  
claimed in claim 50, the method further comprising the  
10 steps of:

placing the protecting member of the cast-cutter  
adjacent to the skin of the patient and aligning the  
cutting means with an alternative end portion of the  
cast; and

15 activating and moving the cast-cutter along the  
length of the cast to allow the cast to be removed in two  
portions.

52. A cast-cutter for use in removing a cast from a  
20 patient, the cast-cutter comprising:

a body;

cutting means supported by the body and adapted for  
cutting a cast material by an abrasion action; and

25 a protection member supported by the body and  
adapted to be positioned between the cutting means and  
the patient, to protect the skin of the patient.

53. A cast-cutter as claimed in claim 52, wherein the  
cutting means includes at least one cutting disc suitably  
30 mounted on the body of the cast-cutter.

54. A cast-cutter as claimed in claim 53, wherein the at  
least one cutting disc is rotatably mounted on the body.



55. A cast-cutter as claimed in claim 53 or 54, wherein the at least one cutting disc is adapted to be rotated about an axis of rotation to effect cutting of a cast.

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56. A cast-cutter as claimed in claim 53 or 54, wherein the at least one cutting disc is adapted to be oscillated about an axis of rotation to effect cutting of a cast.

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57. A cast-cutter as claimed in any one of claim 52 to 56, wherein the cutting means includes one cutting disc.

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58. A cast-cutter as claimed in any one of claim 52 to 56, wherein the cutting means includes two cutting discs mounted and movable about a common axis of rotation.

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59. A cast-cutter as claimed in claim 52, wherein the cutting means includes at least one cutting rod rotatably mounted between the body and protection member, wherein the outer circumferential surface of the cutting rod is adapted in use to cut a cast material by a process of abrasion.

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60. A cast-cutter as claimed in any one of claims 52 to 59, wherein the protection member is secured to the body of the cast-cutter by at least one connection member, one end of the connection member being secured or coupled to the body, and another end of the connecting member being secured or coupled to the protection member.

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61. A cast-cutter as claimed in claim 60, wherein the connecting member is adapted to pass through any slot or gap created in a cast material by the cutting means.

62. A cast-cutter as claimed in claim 62 or 63, wherein the connecting member is adapted to exert a force on the edges of any slot through which the connection member passes, in order to force apart the edges of the slot.

63. A cast-cutter as claimed in claim 60, 61 or 62, wherein a single connection member is provided.

64. A cast-cutter as claimed in claim 60, 61 or 62, wherein two or more connecting members are provided, wherein each connecting member is adapted to pass through a respective slot created in a cast material by the cutting means.

65. A cast-cutter as claimed in any one of claims 52 to 64, wherein the protection member is pivotally mounted on the body of the cast-cutter.

66. A method of removing a cast from a patient, said method comprising the steps of:

providing a cast cutter having abrading cutting means and a protecting member;

placing the protecting member adjacent to the skin of the patient such that the protecting member is located between the skin of the patient and the cutting means;

aligning the cutting means with the end of the cast; and

activating and moving the cast-cutter along the length of the cast to cut through the cast, allowing the cast to be removed from the patient.